

ART. X. — *Notes on Lepidoptera collected by H. Hamilton in various Localities in the Queenstown District, Otago, between November, 1907, and March, 1908.*

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[Read before the Wellington Philosophical Society, 8th December, 1908.]

IN November, 1907, my son, H. Hamilton, was employed on a survey party of the New Zealand Geological Survey, under Professor Park, and in the course of the survey he came across a considerable number of *Lepidoptera*. The specimens secured were forwarded from time to time to the Museum, Wellington, and were then relaxed and set. I now give a list of about sixty of the species, as a contribution towards the information which will be necessary before the general distribution of the New Zealand *Lepidoptera* is known with any approach to accuracy. It must be remembered that owing to his duties my son could not devote any special time to collecting, and therefore missed many good things.

Nyctemera annulata, Gml.

This very common insect was sent up at my request, in the hope that some good varieties might occur, but beyond considerable variation in size there was nothing remarkable.

Metacrias huttoni.

A fine series of fourteen specimens was taken early in the season in the upper Arrow River bed, also in the Twelve-mile Creek, Macetown.

Orthosia comma, Walk.

Five specimens, from various localities.

Orthosia immunis, Walk.

Eight specimens, in very poor condition.

Physetica cærulea, Gml.

A very battered specimen. I have since obtained a specimen which, when fresh, exhibited a most beautiful bluish-violet tint.

Leucania moderata, Walk.

A good series of this insect, which appears to be a southern species. I have, however, taken specimens in Wellington this season.

Leucania nullifera, Walk.

The specimens taken of this fine insect were not in good condition. They were taken round the tent at night. I took several at a lamp about the same time at Waiouru, on the North Island Main Trunk line.

Leucania purdii.

I was delighted to receive a very typical specimen of this moth. At present it is decidedly scarce. Mr. Hudson took a specimen, at sugar, in the Rounteburn.

Leucania atristriga, Walk.

This occurred in several localities, and seems to be common. I took it plentifully near Dunedin, at sugar, in the middle of March.

Leucania alopa, Meyr.

Four specimens of what I take to be this insect were sent from the neighbourhood of Macetown in February.

Leucania unica, Walk.

There is one specimen in poor condition which may be this species.

Leucania semivittata, Walk.

Four specimens were sent from Skipper's in January, flying round the tent in the evening.

Ichneutica ceraunias.

Five specimens of this very striking species were sent in January. One of the specimens is very light in colour, and is probably a female.

Melanchra disjungens, Walk.

This very distinct species was sent from Macetown. I took a very fine series, at light, at Waiouru, on the Main Trunk Railway, and also a few from the tussock-grass in the daytime in the same place.

Melanchra paracausta.

One specimen may probably represent this southern species.

Melanchra insignis.

Only two specimens are included in the collection. Either it was too early for this handsome moth or the altitude was too great. It was very plentiful, at sugar, in the Botanical Gardens in Wellington in February and March.

Melanchra plena.

A few specimens were obtained by my son, and I took a large number, at sugar, near Dunedin in the middle of March.

Melanchra mutans.

Only five *mutans* were sent.

Melanchra pictula.

My son was greatly interested in the capture of a specimen of this moth, in splendid condition, about the 30th March. He struck with the net at a *Vanessa gonerilla* at rest on a tree-trunk. He missed the butterfly, but heard a rustling in the net and found the *pictula*. It was probably at rest on the trunk of the tree.

Melanchra composita.

This species was, of course, well represented.

Melanchra rubescens.

This insect appeared to be one of the early forms, and was fairly numerous.

Melanchra umbra.

I was glad to receive in one parcel three good specimens of this species.

Melanchra cucullina.

Four good specimens.

Melanchra dotata.

I think that one specimen received in January is *M. dotata*.

Agrotis admirationis.

There is a fine specimen of what I take to be this species in the collection, and an inferior specimen, much rubbed.

Many other species were also collected, mostly from alpine localities. Along the shores of Lake Wakatipu (1,000 ft.), in the month of March, the following species were gaily sporting in the sunshine:—

Notoreas brephos.

Notoreas perornata.

Lythria euclidiata.

Together with these were *Chrysophanus boldenarum* and an occasional *Vanessa gonerilla*.

From other localities in the same district I received at various times,—

Phrissogonus denotatus, Walk.

Hydriomena deltoidata, Walk.

„ *rixata*, Feld.

„ *purpurifera*, Fered.

Xanthorhoe orophylla, Meyr.

„ *semifissata*, Walk.

„ *chlamydota*, Walk.

„ *beata*, Butl.

„ *adonis*, Huds.

„ *prasinas*, Meyr.

„ *cineraria*, Dld.

„ *recta*.

„ *oraria*.

„ *cataphracta*, Meyr.

Lythria euclidiata, Gml.

Dasyuris anceps, Butl.

„ *hectori*.

Notoreas insignis, Butl.

„ *paradelpha*, Meyr.

„ *perornata*, Walk.

„ *brephos*, Walk.

Selidosema suavis, Butl.

„ *aristarcha*, Meyr.

„ *dejectaria*, Walk.

Azelina fortinata, Gml.

Of the *Rhopalocera*, the beautiful *Vanessa gonerilla* was everywhere present—first the hibernated specimens, and, later on, the new brood. These were in splendid condition when I visited Queenstown in the middle of March.

Argyrophenga antipodum, Doubl.

I particularly asked for specimens of this species from as many localities as possible, and I received altogether about forty specimens in good condition from Macetown, Skipper's, Bullendale, and Moke Lake.

Erebia pluto, var. *micans*.

My son writes with great enthusiasm of his first sight of this alpine species and wired to me that he had taken some. This was early in December, and I could hardly believe that he had correctly identified them; but when they came to hand I was glad to find that not only were they *Erebia*, but they were in some respects different from the specimens which I had seen from Mount Arthur and Mount Peel.

The specimens were in the best possible condition, and are evidently much earlier in appearing than has been supposed, as Mr. Hudson* gives January, February, and March. It is recorded in the same work as being taken by him at Wakatipu, but there is no mention of any considerable variation. The first box of specimens was accompanied by a note, in which my son drew my attention to the spangling of golden scales on the underside hindwings, and to the intense velvet-black of the specimens, as contrasted with the cabinet specimens from Mount Arthur. Some of their rich black has disappeared now that the specimens have been set, but the golden scales are still apparent in the majority of cases, though less bright. They are found on both male and female. By the kindness of Mr. A. McKay, an enlarged photograph was taken of the under-surface, which showed the brilliant reflecting scales, implanted at irregular distances, but all in the same direction as the others, so that there is no possibility of their having been derived by accident in the killing-bottle or in the packing from some other species. Their appearance is very beautiful under the microscope. I have examined the specimens in Mr. Hudson's collection and in two other collections without finding any bright scales of this kind on the under-surface of the hindwings. The average size of the Otago specimens is smaller than that of the Mount Arthur ones.

From the notes that accompanied the specimens it appears that the *Erebia* is found in small colonies.

From the early date at which the majority of the specimens were obtained it is possible that the spang'led form may be either an early brood or a very local form. The usual variations are to be found in the number and arrangement of the white centres to the ocelli, but they are uniformly smaller than in the northern specimens which are available for comparison, being in some cases barely visible. The pale spots visible on the under-surface of the hindwings of *E. pluto* are in the majority of cases not to be distinguished in this variety.

I have not examined the venation.

Of thirteen specimens from Mount Arthur and Mount Peel in the Museum collection, I find that the maximum expanse of the forewing is 51 mm. and the minimum 45 mm. Of the thirty-five Otago specimens in the collection, the maximum is 46 mm. and the minimum 40 mm.

Altogether this form is so different from the specimens available from other localities that I suggest for it as a varietal name *E. pluto*, var. *micans*.

The first *Erebias* were caught on the upper Arrow River and on Mount Hyde, at about 6,000 ft., about the 20th November;† one colony was found near the Premier Mine on the 19th December; and on the 30th January they had all disappeared.

The genus is a very variable one, and in all alpine regions local forms are very numerous.

* Hudson, "New Zealand Moths and Butterflies," p. 114.

† They were then copulating.

Porina.

Specimens of *P. despecta* and *umbraculata* were sent from time to time, and four specimens of a very small form, which may only be small males, or may be the males of other species.

***Porina annulata*, n. sp.**

This most interesting form was received by me one day with the following particulars: "Just returned to Skipper's after a rough trip, which, however, I forgot all about after I caught the moth that I am now sending. When we were up Mount Aurum I thought I saw a large moth with a ringed body flying quickly about, just off the ground, but I could not lay hands on one. When we had finished chaining up Stony Creek one of these flew up and got tangled in a tussock right at my feet. I promptly dropped the net over him. . . . I do not know if it is rare, but it was only seen above 4,000 ft., on tussocky beds among the gentians."

This moth is at once distinguished from the other *Porinas* by the distinct annulate markings on the body, the only other at all partaking of this character being *P. caracterifera*, a very much larger moth, probably belonging to a different section of the group. Both the upper and lower wings are semi-transparent. Expansion of forewing, 50 mm.; lower wing, 44 mm. The forewings are sparsely covered with scales, so as to be nearly as translucent as the hindwings of *P. despecta*. Antennæ strongly pectinate in the male. Head and thorax yellowish-brown. Abdomen pale yellowish-grey, with seven or eight black rings, very distinct when fresh, but not so apparent when dry. The forewings are brownish-grey, irregularly covered with markings, the majority of which are spots of an ochre-yellow, interspersed with smaller white marks. The hindwings are brown-grey, showing a few yellowish spots on the termen. Both wings are bordered with dark reddish-brown cilia, longer in proportion than those in *P. cervinata*.

The yellow spots on the wings and the annulated body afford the best distinctive points for the recognition of the species.

In the specimens described the fore and hind wings are more nearly alike in size than in most of the members of the genus, being as 50 and 44. In my specimen of *P. cervinata* they are as 82 to 65. In *P. dinodes* the relation is, however, about 70 to 62. In *Porina* the variation in size, markings, &c., are so great that a long series will be required before any weight can be attached to the proportionate expansion of the wings.

Type in the Dominion Museum; coll., H. Hamilton.
